saline and resuspended in 0.05% collagease and about 0.1% lipase to partially digest the proteins and fat present. This incubation continued for two days.

In another protocol, the withheld supernatant from Example 1 was incubated in EDTA to eliminate any epithelial cells. The remaining cells were lysed using a buffer containing 1% NP40, 0.5% sodium deoxycholate, 0.1% SDS, 5 mM EDTA, 0.4M NaCl, 50 mMTris-HCL (pH 8) and protease inhibitors, and 10 μg/ml each of leupeptin, chymostatin, antipain, and pepstatin A. Finally, the tissue was extensively washed in PBS without divalent cations.

After both preparatory protocols, remaining substance was washed and identified as a gelatinous mass. Microscopic analysis of this material revealed that it contained no cells, and it was composed of high amounts of collagen (likely type IV) and a wide variety of growth factors. Preparations of this material have supported the growth of cells, demonstrating it to be an excellent substrate for tissue culture.

Incorporation by Reference

All sources (e.g., inventor's certificates, patent applications, patents, printed publications, repository accessions or records, utility models, world-wide web pages, and the like) referred to or cited anywhere in this document or in any drawing, Sequence Listing, or Statement filed concurrently herewith are hereby incorporated into and made part of this specification by such reference thereto.

Guide to Interpretation

The foregoing is an integrated description of the invention as a whole, not merely of any particular element of facet thereof. The description describes "preferred embodiments" of this invention, including the best mode known to the inventors for carrying it out. Of course, upon reading the foregoing description, variations of those preferred embodiments will become obvious to those of ordinary skill in the art The inventors expect skilled artisans to employ such variations as appropriate, and the inventors intend for the invention to be practiced otherwise than as specifically described herein. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law.

As used in the foregoing description and in the following claims, singular indicators (eg., "a" or "one") include the plural, unless otherwise indicated. Recitation of a range of discontinuous values is intended to serve as a shorthand method of referring individually to each separate value falling within the range, and each separate value is incorporated into the specification as if it were individually listed Additionally, the following terms are defined as follows:

An anlage is a primordial structure that has a capacity to develop into a specific mature structure.

A developmental phenotype is the potential of a cell to acquire a particular physical phenotype through the process of differentiation.

A hormone is any substance that is secreted by a cell and that causes a phenotypic change in the same or another cell upon contact.

A stem cell is a pluripotent cell that has the capacity to differentiate in accordance with at least two discrete developmental pathways.

As regards the claims in particular, the term "consisting essentially of" indicates that unlisted ingredients or steps that do not materially affect the basic and novel properties of the invention can be employed in addition to the specifically recited ingredients or steps. In contrast, terms such as "comprising," "having," and "including" indicate that any ingredients or steps can be present in addition to those recited. The term "consisting of" indicates that only the recited ingredients or steps are present, but does not foreclose the possibility that equivalents of the ingredients or steps can substitute for those specifically recited.

We claim:

1. An isolated adipose-derived stem cell that can differentiate into two or more of the group consisting of a bone cell, a cartilage cell, a nerve cell, or a muscle cell.

2. An isolated, adipose-derived multipotent cell that differentiates into cells of two or more mesodermal phenotypes.

3. An isolated adipose-derived stem cell that differentiates into two or more of the group consisting of a fat cell, a bone cell, a cartilage cell, a nerve cell, or a muscle cell.

4. An isolated adipose-derived stem cell that differentiates into a combination of any of a fat cell, a bone cell, a cartilage cell, a nerve cell, or a muscle cell.

5. A substantially homogeneous population of adipose-derived stem cells, comprising a pluality of the stem cell of claim **1**, **3** or **4**.

6. The adipose-derived stem cell of claim **1**, **3** or **4** which can be cultured for at least 15 passages without differentiating.

7. The adipose-derived stem cell of claim **1**, **3** or **4** which is human.

8. The cell of any of claim **1**, **3** or **4** which is genetically modified.

9. The cell of any of claim **1**, **3** or **4**, which has a cell-surface bound intercellular signaling moiety.

10. The cell of any of claim **1**, **3** or **4**, which secretes a hormone.

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